

a ♀ specimen of *Argiope fasciata*, which is thus located upon the Pacific coast, giving this beautiful and interesting spider a continental distribution.—*Proc. Acad. Nat. Sci. Philad.* 1883, Nov. 27, p. 276.

*On an Aerial Alga inhabiting the Bark of the Vine.*

By M. J. B. SCHNETZLER.

In the month of April of the present year (1883) there was observed upon numerous vines between Pully and Belmont (Canton de Vaud) a pulverulent matter of a brownish-red colour, which penetrated into the fissures of the periderm. This pulverulent matter is formed by an aerial alga, *Chroolepus umbrinum*, Ktz., or *Trentepohlia umbrina* (Kg.), Born., which is met with upon the bark of various trees, but has not hitherto been mentioned upon that of the vine. This alga contains a very refractive red oil, which diffuses a faint odour of violets; it does not appear to injure the vine, upon which occurs a complete cryptogamic vegetation formed by species of *Oscillaria*, *Nostoc*, and *Pleurococcus*, *Confervæ*, Mosses, and Lichens (*Physcia ciliaris*, *Pyrenula*, &c.). *Chroolepus umbrinum* is composed of small spherical cells of about 30  $\mu$ , forming small curved chains.

When the bark of the vine reddened by *Chroolepus umbrinum* is moistened with water, this same alga is seen very distinctly in the thallus of one of the lichens of the genus *Pyrenula*. It must be remarked, however, that the cells of the alga which occur in the thallus are smaller than those which exist in the air; they form in it very distinct little chains. We observe, moreover, all the transitions between the cells which exist out of the thallus and those which occur more or less deeply buried in it. Around the chaplets and free cells of the *Chroolepus* we sometimes find the filaments of the mycelium of a fungus, which surround them and bind them into small colonies.

The cells of *Chroolepus umbrinum*, which occur either in the free state or immersed in the thallus of *Pyrenula*, often present a green coloration. One can find all the transitions between entirely red cells and others partially or entirely green. This green coloration is met with especially when vine-bark reddened by the free *Chroolepus* is plunged into water. In this latter case we see issuing from some of these cells, which are still red, small ovoid bodies which swim briskly in the water (*zoogonidia* of Wille \*).

In a very interesting memoir by M. A. B. Frank † we find some observations precisely analogous to the preceding. It results from them, as we have likewise ascertained, that *Chroolepus umbrinum* may lead a completely free and independent existence, while the same alga occurs with smaller dimensions in the thallus of crustaceous lichens; but when, in consequence of the disaggregation of this thallus, the alga is set free, it multiplies and by degrees resumes its typical form and its normal dimensions.—*Bulletin de la Société Vaudoise des Sciences Naturelles*, sér. 2, vol. xix. no. 89, p. 53.

\* Just, Bot. Jahresber. 1878, p. 390.

† "Ueber die biologischen Verhältnisse des Thallus einiger Krustenflechten," in Just, Bot. Jahresber. 1876, p. 70.